

## How to ease tweens

Easing is a technique for modifying the way Adobe Flash Professional CS5 calculates the property values between property keyframes in a tween. Without easing, Flash calculates these values so the change to the value is the same in each frame. You can use easing to adjust the rate of change to the values for more natural or more complex animation.

An ease is a mathematical curve you apply to the property values of a tween. The final effect of the tween is the result of the combination of the range of property values in the tween and the ease curve.

You can apply easing in the Motion Editor for motion tweens or in the Property inspector for classic tweens. Eases applied in the Motion Editor can affect a single property, a group of properties, or all properties of a tween. Eases applied in the Property inspector affect a single property or all of the properties included in a tween.

An ease can be simple or complex. Flash includes a range of preset eases you can apply for simple or complex effects. In the Property inspector or Motion Editor, you can also create your own custom ease curves.

One of the many common uses of easing is when you have edited a motion path on the Stage and enabled roving keyframes to make the speed of motion consistent in each segment of the path. You can then use easing to add more realistic acceleration and deceleration at the ends of the path.

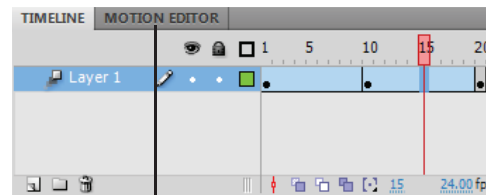
### Easing individual properties for motion tweens in the Motion Editor

You can apply a preset ease to an individual property or a category of properties in the Motion Editor. In the following steps, you first create a motion tween and then add a preset ease to the tween.

*To apply a preset ease:*

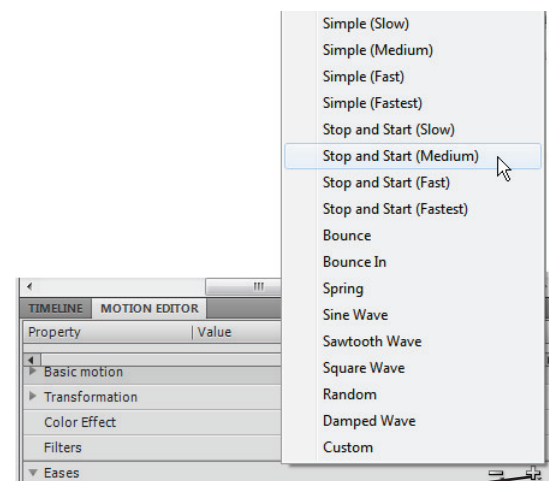
1. Start Flash and choose File > New (ActionScript 3.0).
2. Draw a shape on the Stage.
3. Using the Selection tool, double-click to select the shape and border, if present
4. Choose Modify > Convert To Symbol.  
The Convert To Symbol dialog box appears.
5. Type a new name for the symbol in the Name text box, select Graphic for Type, and click OK.
6. Insert a frame at frame 40.

7. Make sure frame 40 (the end frame for the motion tween) is selected and select Insert > Motion Tween.
8. Select the symbol in frame 40 and use the Selection tool to move the object to a different position on the Stage.
9. In the Timeline, select the motion tween and select the Motion Editor tab (**Figure 1**).
10. In the Motion Editor, scroll down to Eases, click the Add Ease button (plus sign) and select an ease, such as Stop And Start (Medium) (**Figure 2**).



Motion Editor tab

**Figure 1** Flash Timeline with motion tween and Motion Editor tab



Add Ease button

**Figure 2** Adding eases in the Motion Editor

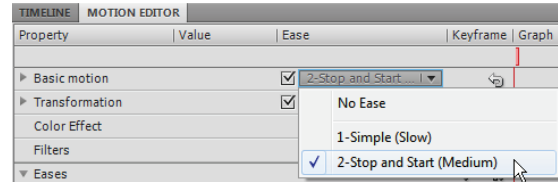
11. Scroll up to Basic Motion, and select the ease you just added from the Ease pop-up menu (**Figure 3**).

12. Press Enter (Windows) or Return (Mac OS) to preview the eased tween.

If you chose the Stop And Start (Medium) ease, for example, the tween will stop briefly and then begin again.

13. Adjust the eases in the tween until you achieve the desired effect.

See the following section for information about adjusting ease curves.



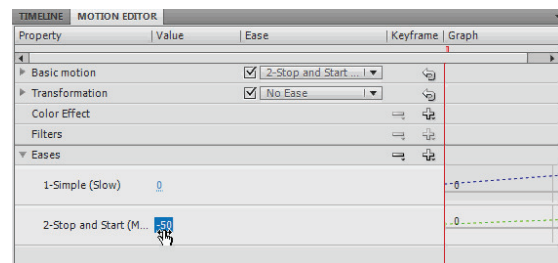
**Figure 3** Adding the ease to Basic Motion

## Editing ease curves for motion tweens in the Motion Editor

Eases are displayed as *ease curves* in the right side of the Motion Editor. You can edit the shape of preset ease curves and create custom ease curves.

To edit ease curves for motion tweens:

- To edit a preset ease curve, set the value for the ease in the field next to the ease name (**Figure 4**). To do so, click on the value and drag to the left (negative) or right (positive).
  - For simple ease curves, the value is a percentage representing the strength of the application of the ease curve to the property curve. Positive values increase the ease at the end of the curve. Negative values increase the ease at the beginning of the curve.
  - For ease curves that are waves, such as the sine wave or sawtooth wave, the value represents the number of half-cycles in the wave.
  - To edit a preset ease, first add it to the list of available eases by using the Add button in the Ease section of the Motion Editor.
  - To edit a custom ease curve, add it to the list of eases and then edit the curve by using the same techniques for editing any other Bezier curve.



**Figure 4** Editing a simple ease curve

## Easing individual properties for classic tweens in the Property inspector

For classic tweens, the Motion Editor is not available. You create eases for classic tweens by using the Property inspector.

To ease a classic tween:

1. Start Flash and choose File > New (ActionScript 3.0).
2. Add a symbol to the Stage.
3. Select frame 40.
4. Select Insert > Timeline > Keyframe.

The tween will last for 40 frames.

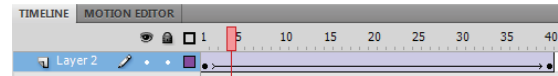
5. Make sure frame 40 is still selected and move the symbol to a new position on the Stage.
6. Click on the tween span on the Timeline and select Insert > Classic Tween.

The classic tween appears as light blue with an arrow.

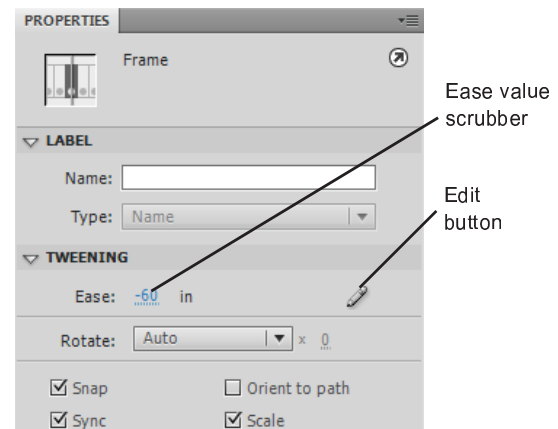
7. Select frame 40, and adjust the position, color, or scale of the symbol to be as you want the animation to end.

You can also adjust the properties of the symbol in the tweening section of the Property inspector.

8. In the Timeline, select the classic tween (**Figure 5**).
9. In the Property inspector, enter an Ease value to determine the strength of the ease, such as **-60** (**Figure 6**).
10. To preview the animation on the Stage, press Enter (Windows) or Return (Mac OS).
11. Adjust the ease in the tween until you achieve the desired effect.



**Figure 5** Classic tween in the Timeline



**Figure 6** Editing a simple ease curve

## Editing ease curves for classic tweens in the Property inspector

In the Property inspector, you can edit the shape of the curves to create custom ease-ins and ease-outs.

To edit ease curves:

1. In the Timeline, select the classic tween that you created in the previous steps.
2. Click the Edit button next to the Ease Value field in the frame Property inspector (**Figure 6**).

The Custom Ease In/Ease Out dialog box appears (**Figure 7**).

3. (Optional) To display the curve for a property, deselect Use One Setting For All Properties, and select a property in the menu (**Figure 8**).
4. You can add control points anywhere along the curve to help you manipulate the curve. To add a control point, move the arrowhead pointer near the curve until the pointer changes to a full arrow, and then click.
5. To increase the speed of the object, drag the control point up; to slow down the speed of the object, drag it down.
6. To further adjust the ease curve and fine-tune the ease value of the tween, drag the vertex handles (**Figure 9**).
7. To view the animation on the Stage, click the play button in the lower left corner.
8. Adjust the controls until you achieve the desired effect.

**Note:** If you use the Custom Ease In/Ease Out dialog box to apply a custom ease to a frame, the ease value edit box displays '---'. If you use the edit box or the pop up slider to apply an ease value to a frame, the Custom Ease graph is set to the equivalent curve, and the Use One Setting For All Properties option is selected.

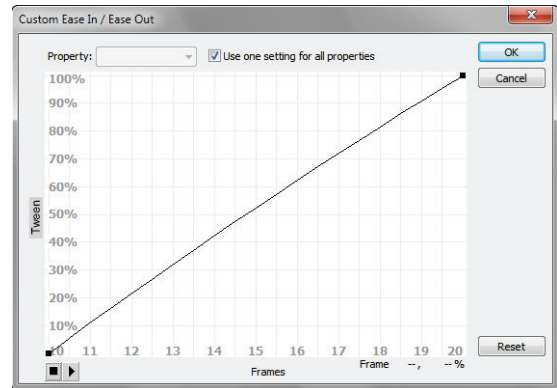


Figure 7 Custom Ease In / Ease Out dialog box

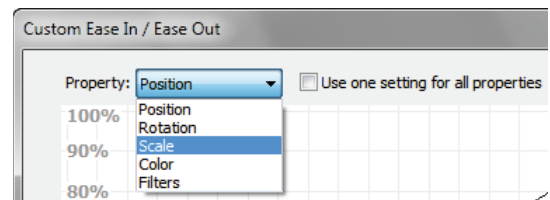


Figure 8 Easing property menu

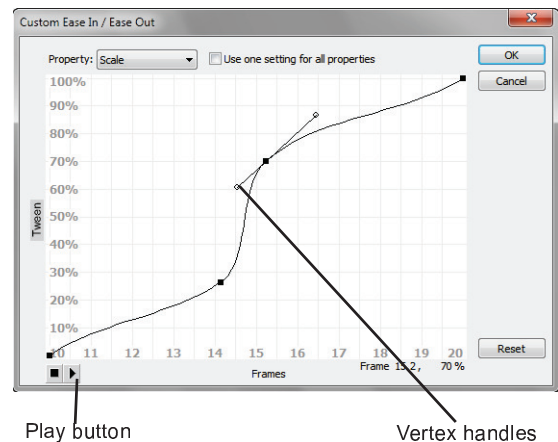


Figure 9 Editing a simple ease curve